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A 4 years follow-up study of immediate and delayed loading of small-diameter dental implants

Background:

Mandibular overdenture Supported by tow Dental implants have been approved to have good success rates with implants placed in different procedures. The aim of this study is to evaluate 12 consecutive cases of immediately and delayed loading of Small-diameter implants (SDIs) as support of mandibular overdenture (one implant was immediate loaded, and one was delayed loaded for every case) and report mesial and distal marginal bone resorption rate.

Materials and Methods:

First SDI for every patient was placed with flapless surgical technique in the anterior aria of the mandible and was submerged. After 3 months, the second SDI for every patient was placed in the other side of the mouth with the same surgical technique. In the day of second SDI placement, the tow ball attachments were placed on the tow SDIs; the attachment housing was placed to the denture base with self-curing lining resin, and attachments were activated. In this technique, the first SDI was delayed loaded and the second was immediately loaded. The SDIs were then observed, and the marginal bone level was evaluated by periapical radiographs for 4 years.

Results:

Overall, marginal bone resorption rate after 6 months of loading was 0.79 mm around immediately loaded SDIs and 0.71 mm around delayed loaded SDIs. After 4 years of loading, marginal bone resorption rate was 1.3 mm around immediately loaded SDIs and 1.2 mm around delayed loaded SDIs.

Conclusion:

In the limitations and conditions of this study, complete mandibular dentures supported by two SDIs with immediate and delayed occlusal loading had a high survival rate. Alveolar bone resorption rate after 4 years was 1.3 mm for immediate loaded SDIs and 1.2 mm for delayed loaded SDIs.

Keywords: Immediate loading, overdenture, small-diameter implants

Biography:

Dr. Hamzah Abbas, is a dentist specializing in prosthodontics and implants. Graduated from the University of Aleppo in Syria. He is currently the Vice Dean of the College of Dentistry at Al-Shahba Private University for Scientific Affairs. Prosthodontics and implants are taught at the college. Dr. Hamzah's research focuses on implant prosthodontics and methods of stress distribution transferred to the alveolar bone. He is also working on innovating new methods in prosthodontics. In addition, Dr. Hamzah manage a specialized dental implant center in Aleppo. He is a lecturer in many local and regional scientific courses and seminars.